MAIL STOP APPEAL BRIEF - PATENT

PATENTS

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Johannes Hendrikus VAN LITH et al.

Serial No. 09/883,364 Appeal No. _____

Filed June 19, 2001 GROUP 3682

DRIVING BELT AND TRANSVERSE ELEMENT FOR A DRIVING BELT

**APPEAL BRIEF**

MAY IT PLEASE YOUR HONORS: August 31, 2004

**1. Real Party in Interest**

The real party in interest in this appeal is the assignee, Van Doorne's Transmissie b.v. of Tilburg, The Netherlands.

**2. Related Appeals and Interferences**

None.

**3. Status of Claims**

Claims 1-2 and 9-13 are pending, claims 3-8 having been cancelled. The final rejection of claims 1-2 and 9-13 is being appealed.

**4. Status of Amendments**

No amendment has been filed after the Official Action of June 1, 2004 making the rejections final.

**5. Summary of Invention**

The invention is an improved metal transverse element for Continuous Variable Transmission (CVT) use, the transverse element having a projection and recess that mate in the longitudinal direction [publication paragraph 0001].

The mating recess and projection are illustrated in Figures 2-4. Figure 3 shows projection 14 and recess 15. Figures 2 and 4 show the projection and recess extending across the entire horizontal width of the narrow second part 12.

As per publication paragraph 0004, the provision of the projection 14 and of the corresponding recess 15 (located on the other side of the transverse element) takes place through deformation of the metal material by a stamp moving into the metal to form the recess 15 and simultaneously form the projection 14 by displacement of the moved metal out the opposite side.

As per publication paragraph 0012, by forming the projection at least partially in the narrow second part 12, the length of the projection (its dimension in horizontal direction) is limited. This placement of the projection enables the driving belt to function better than in the situation wherein the projection extends elsewhere over the entire width of the transverse element; that is, better than if the projection is formed in a part of the transverse

element that is considerably wider than the second part (the bottom first part 11 or the top third part 13).

The placement of the protrusion in the second part 12 rather than in the first part 11 or the third part 13 allows the invention to utilize improved manufacturing (stamping) while making the element smaller and thus lighter (publication paragraph 0009).

**6. Issue**

A single issue on appeal is whether claims 1, 2, 10, 12 and 13 were properly rejected under §103 as obvious over MASUDA et al. 5,169,369 in view of TAKAGI (JP-1-247841).

**7. Grouping of Claims**

The claims are all grouped together.

**8. Arguments**

In the instant rejection, there is a first dispute as to what are the pending recitations.

It is well established that for a claim to be obvious, each recitation of the claim must be taught or suggested by the prior art. The applied references do not meet this test and therefore the rejection is improper.

In this regard, it is also well established that, for a product claim, the test is whether or not the recited

features are either taught or suggested by the applied art. In the presently rejected claims, the method of manufacture is not being claimed; rather, a product with certain structural features is being claimed. However, even though the method of manufacture is not considered in a product claim, structural features that are identifiable as resulting from that manufacture can reasonably be recited and are then due consideration.

Each of independent claims 1, 10, and 12 recite structural features of the invention the Examiner has given no patentable weight (see the last paragraph of Official Action June 1, 2004, page 3). That is, the Examiner gives no patentable weight to the recitations that i) the transverse element is a cut single piece of material, and ii) the recess 15 is a deformation recess on the rear side of the transverse element, the rear side being deformed to such an extent that the projection 14 is formed on the front side of the transverse element from displaced deformation material forming the recess.

See page 5 of the Official Action that responds to appellants' previous arguments, "these limitations [cut single piece and deformation recess …] do not provide any additional structural elements than the recess and the projection that were previously claimed."

The Examiner (paragraph spanning pages 3-4 of Official Action) characterizes these recitations as being product-by-process recitations, citing to MPEP 2113. These are not product-by-process recitations but are structural recitations.

Note that there are no indefiniteness rejections pending. Therefore, there is at least implicit acknowledgement that one of skill can identify a transverse element that is a "cut single piece of material" and a recess that is "deformation recess … [with] the rear side being deformed to such an extent that the projection (14) is formed on the front side of the transverse element from displaced deformation material forming the recess."

To the extent that these recitations have functional aspects, see that MPEP 2113 requires (emphasis added) that "[t]he structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to ***impart distinctive structural characteristics to the final product***. See, e.g., *In re Garnero*, F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979) (holding 'interbonded by interfusion' to limit structure of the claimed composite and noting that terms such as

'welded.' 'intermixed,' 'ground in place,' 'press fitted,' and 'etched' are capable of construction as structural limitations."

Appellants believe that "a single cut piece of material" is a definite and distinctive structural characteristic of the recited product. Further, appellants believe that "the recess (15) is a deformation recess on the rear side of the transverse element, the rear side being deformed to such an extent that the projection (14) is formed on the front side of the transverse element from displaced deformation material forming the recess" is also a definite and distinctive structural characteristic of the recited product.

In the paragraph spanning pages 3-4 of the Official Action, the Examiner has correctly stated that the patentability of a product does not depend on its method of production but rather whether that product is the same or obvious from a product of the prior art.

The rejection, however, fails as the Examiner has not identified how the prior art is the same or obvious as to the recited "cut single piece of material" and the recess being a "deformation recess ... [with] the rear side being deformed to such an extent that the projection (14) is formed on the front side of the transverse element from displaced deformation material forming the recess." That

the Examiner has not found these features is clear from the Examiner's own page 5 statement "these limitations [cut single piece and deformation recess] do not provide any additional structural elements than the recess and the projection that were previously claimed."

Appellants urge that the Examiner be required to give these recitations their proper structural weight and that the rejections are improper since these features were not identified in the applied prior art.

MASUDA et al. in combination with TAKAGI do not render obvious the present claims.

MASUDA et al. disclose transverse elements that, as in the present invention, are adapted for mutually independent functioning (MASUDA et al. column 1, lines 29-33 and 43-47) in that the elements are not interconnected and are slidable independently of each other along the endless band.

In contrast to the present invention, and as acknowledged by the Examiner, MASUDA et al. do not disclose that the projection and recess extend in the horizontal direction over the entire dimension of the second part) even though MASUDA et al. do teach i) a pair of laterally located, opposing complementary projections and recesses (72, 72 and 80, 82 of Figures 2-5), and ii) as an

alternative, a centrally located projection and recess (106, 108 of Figures 6-7).

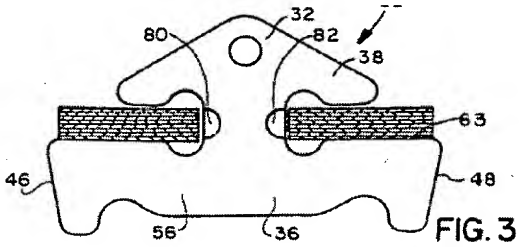


FIG. 3

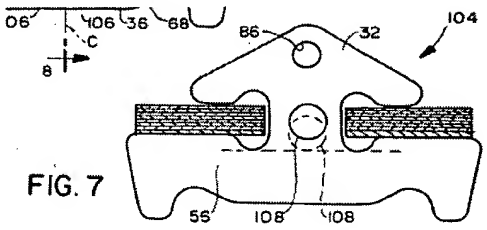


FIG. 7

Indeed, MASUDA et al. teach away from extending the projection and recess completely over the horizontal portion of the second part in that the disclosed embodiments are all of a confined nature, rather than an unbounded shape.

Although at column 9, lines 53-56 MASUDA et al. disclose that different shape projections are suitable, note that the embodiments are all of a confined object rather than an unbounded shape extending across the entire horizontal portion. See the half-circular projections 80, 82 located at lateral sides of the middle part (Figure 3) and the oval or circular projections 110, 111 located at the center of the middle part (Figure 9).

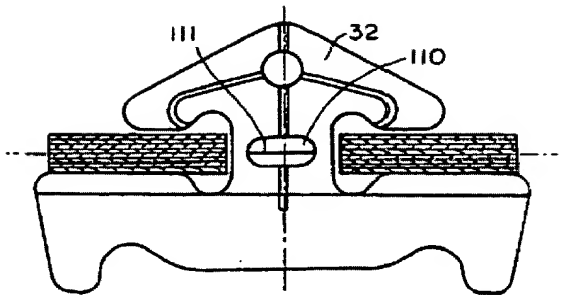
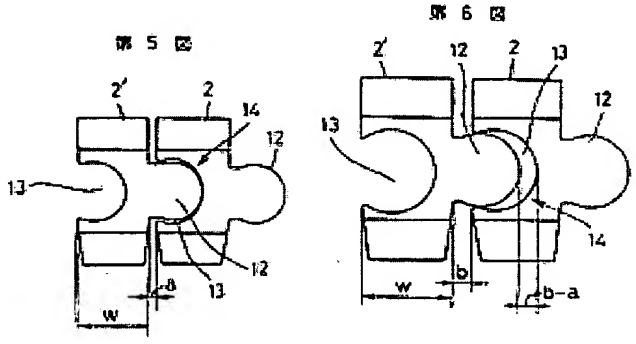



FIG. 9

For this missing feature of the projection and recess extending in the horizontal direction over the entire dimension of the second part, the Examiner relies on TAKAGI. But this combination fails when one considers the nature and teachings of TAKAGI.

See Figures 5-6 clearly demonstrating that TAKAGI does not teach a deformation recess and projection, and the English summary indicates that the protrusion part and the groove part are engaged with each other to form an interlocking hinge.

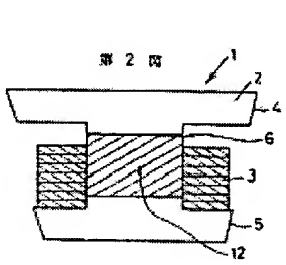


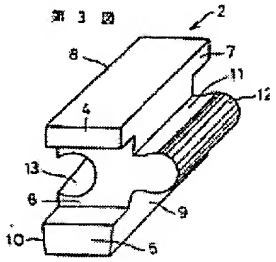

TAKAGI teaches "To enable expansion and contraction and bending of a hinge …, protrusion parts and groove parts are formed in the two surfaces, positioned

adjacently to each other and facing each other, of a plurality of block bodies for power transmission. ... A protrusion part 12 is formed on the one of the surfaces, ... and a groove part 13 in the other, and the protrusion part and the groove part are engaged with each other to form a hinge part 14. ... During tensile transmission, the portion in the vicinity of the root of the protrusion part 12 is collided with the portion in the vicinity of the inlet of the groove part 13, and during loose transmission, the tip of the protrusion part is brought into contact with the bottom part of the groove part 13. Thus, the block bodies 12... perform tensile transmission on the tension side simultaneously with compression transmission on the loose side, resulting in improvement of the efficiency of power transmission."

From this, one of skill would appreciate that the block bodies 2 perform tensile transmission, and that the elements of TAKAGI are not adapted for mutually independent functioning as the TAKAGI elements are interconnected (hinged) and are not slidable independently of each other along the endless band. Thus, the TAKAGI belt is of a different operational type from the MASUDA et al. belt with structural requirements inconsistent with MASUDA et al. and would therefore not be a teaching source for MASUDA et al.

Further, even if considered and combined with MASUDA et al., the teaching of TAKAGI does not lead to the recited deformed recess/projection pair but rather leads to an interlocking recess and projection hinge, where such interlocking shape adds considerable material and weight to the transverse element, as may be seen from Figures 2-3.




From these figures, it can be readily seen that TAKAGI does not teach shapes that can be achieved by the deformation process since there is no complementary projection and groove. The recess and projection of TAKAGI do not result in the recited transverse element being i) a cut single piece of material, and ii) the recess being a deformation recess on the rear side of the transverse element, the rear side being deformed to such an extent that the projection is formed on the front side of the transverse element from displaced deformation material forming the recess. Since the teachings of TAKAGI would not result in shapes that would meet these recitations, even if the references were combined as proposed, the recitations would not be satisfied.

Again, there is no proper motivation to combine MASUDA et al. and TAKAGI. The Examiner's stated motivation for this combination is "to modify the projection and recess of MASUDA et al. to extend in the horizontal direction over the entire dimension of the second part as taught by TAKAGI in order to improve the efficiency of power transmission (Abstract)." See Official Action page 3, third full paragraph.

This is not the teaching of TAKAGI. Moreover, there is no teaching that the full width extension feature is to be isolated from the hinge construction chosen by TAKAGI or is advantageous apart from the interlocking groove and projection of TAKAGI. To move to a non-interlocking design is hindsight based on the present application.

Although the TAKAGI Abstract mentions improved efficiency of power transmission, see that the Abstract teaching is "protrusion parts and groove parts are formed in the two surfaces, positioned adjacently to each other and facing each other, of a plurality of block bodies for power transmission." Although the figures show the protrusion and groove parts extending horizontally, there is no mention of any advantage achieved by this alone; rather, the advantage is related to the interaction of the protrusion and groove parts as discussed in the Constitution.

See the discussion of the parts being engaged (interlocked) to form a hinge with a radius of the groove being specified relative to the radius of the protrusion so that during tensile transmission, the efficiency of power transmission is improved.

Thus, the Examiner has misapplied the teaching of TAKAGI.

Also, TAKAGI relates to a different type of drive belt than disclosed by MASUDA et al. The Examiner has failed to recognize that the TAKAGI feature of interlocking the projection and recess a longitudinal direction would not be used in MASUDA et al. TAKAGI is directed to include a pulling function (also note the Abstract being silent as to any pushing function) whereas MASUDA et al. is directed to a type of a push belt where longitudinally interlocking projections can not stand the high forces in push belt applications without a high volume of material being applied for supporting the projections, at least is explicitly directed solely to the pushing function of elements as outlined in column 1, lines 29-32 and lines 43-46. Such TAGAKI projections would not satisfy the claims and is contradictory to push belt design, which is concerned with centrifugal force caused by the weight of the elements, especially at high rotational speeds, reducing the amount of

tensile force left over in the tensile means for transferring traction force.

One of skill would appreciate that TAKAGI requires the recess to extend over the horizontal width of the element to permit assembly of the element as interlocked units. MASUDA et al. do not have this problem as the elements are not interlocked together and there would be no reason to incorporate such an interlocking arrangement into MASUDA et al.

Relevant to this point, the Federal Circuit emphasized in July, 1998 that "[m]ost, if not all, inventions are combinations and mostly of old elements." *In re Rouffett*, 47 USPQ 2d 1453, 1457 citing to *Richdel, Inc. v. Sunspool Corp.*, 219 USPQ 8, 12 (Fed. Cir. 1983). The Federal Circuit continued by noting that "rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blue print for piecing together elements in the prior art to defeat the patentability of the claimed invention."

Thus, the Federal Circuit requires that in order to prevent the use of such hindsight, the Official Action must "show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the

cited prior art references for combination in the manner claimed." (*In re Rouffett* at 1458).

The Examiner has not addressed this test but appears to only use the present invention for hindsight motivation to find prior art devices with the features recited.

In summary, there is no proper motivation to combine these references, and if combined, the recited structure would not result.

Appellants urge that the obviousness rejection is improper and that the Examiner has failed to establish a *prima facie* case of obviousness.

**9. Conclusion**

In view of foregoing, it follows that the obviousness rejection over MASUDA et al. 5,169,369 in view of TAKAGI (JP-1-247841) is improper and should be reversed.

Reversal of this rejection is accordingly respectfully solicited.

Respectfully submitted,

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**10. Appendix**

The claims on appeal follow.

1. A driving belt for use in a continuously variable transmission comprising two V-shaped pulleys (2, 3), which driving belt (1) comprises:

a carrier consisting of two metallic endless band packages (5, 6) lying side by side, on which transverse metal elements (4) are disposed freely moveable in a longitudinal direction of the band, wherein,

the transverse element is a cut single piece of material,

each transverse element (4) includes two recesses (7, 8) positioned opposite each other for receiving the band packages (5, 6), so that a first part (11) of the transverse element (4) extends under said band packages (5, 6), a second part (12) of the transverse element (4) is positioned between said band packages (5, 6) and a third part (13) of the transverse element (4) extends above said band packages (5, 6),

the front side of the first part (11) of the transverse element (4) includes a tilting line (18) extending in a horizontal direction and forming a transition between a part of the element at least including said third part (13) that has a substantially constant thickness as

seen in side elevation and a further part of the element wherein said thickness tapers in a downward direction away from the tilting line (18), and includes a projection (14) which can mate with a recess (15) in the adjacent transverse element (4) in a manner allowing free movement of adjacent elements in the longitudinal direction of the belt,

which recess (15) is a deformation recess on the rear side of the transverse element, the rear side being deformed to such an extent that the projection (14) is formed on the front side of the transverse element from displaced deformation material forming the recess,

said projection (14) and said recess (15) extend in a horizontal direction over the entire dimension of the second part (12),

said projection (14) and said recess (15) are mainly formed in the second part of the transverse element (4), and

said projection (14) is disposed some distance above the tilting line (18), which distance is smaller than the smallest vertical dimension (A) of the recess (7, 8).

2. A driving belt according to claim 1, characterised in that said projection (14) and said recess (15) are entirely located in the second part (12) of the transverse element (4).

9. A driving belt according to claim 1, characterised in that edges of the transverse element (4) are deburred.

10. A metallic transverse element for use in a driving belt, comprising:

two recesses (7, 8) positioned opposite each other for receiving band packages (5, 6), so that a first part (11) of the transverse element (4) extends under said band packages (5, 6), a second part (12) of the transverse element (4) is positioned between said band packages (5, 6) and a third part (13) of the transverse element (4) extends above said band packages (5, 6),

the transverse element being a cut single piece of material,

the front side of the first part (11) of the transverse element (4) includes a tilting line (18) extending in a horizontal direction and forming a transition between a part of the element at least including said third part (13) that has a substantially constant thickness as seen in side elevation and a further part of the element wherein said thickness tapers in downward direction away from the tilting line (18), and includes a projection (14) which can mate with a recess (15) in the adjacent transverse element (4) in a manner allowing free movement of adjacent elements in a longitudinal direction of the belt,

which recess (15) is a deformation recess on the rear side of the transverse element, the rear side being deformed to such an extent that the projection (14) is formed on the front side of the transverse element from the deformation forming the recess (15),

said projection (14) and said recess (15) extend in a horizontal direction over the entire dimension of the second part (12),

said projection (14) and said recess (15) are mainly formed in the second part of the transverse element (4),

said projection (14) is disposed some distance above the tilting line (18), which distance is smaller than the smallest vertical dimension (A) of the recess (7, 8), and

the element is metallic.

11. A driving belt according to claim 1, characterised in that edges of the transverse element (4) are rounded.

12. A driving belt for use in a continuously variable transmission comprising two V-shaped pulleys (2, 3), said driving belt (1) comprising:

a carrier consisting of two metallic endless band packages (5, 6) lying side by side; and

transverse metal elements (4) disposed freely moveable in a longitudinal direction of the band, wherein,

the transverse element is a single piece of material,

each transverse element (4) includes two recesses (7, 8) positioned opposite each other for receiving the band packages (5, 6) with i) a first part (11) of the transverse element (4) extending under said band packages (5, 6), ii) a second part (12) of the transverse element (4) positioned between said band packages (5, 6) and iii) a third part (13) of the transverse element (4) extending above said band packages (5, 6),

a front side of the transverse element (4) includes a tilting line (18) extending in a horizontal direction and forming a transition between a part of the element at least including said third part (13) that has a substantially constant thickness as seen in side elevation and a further part of the element wherein said thickness tapers in a downward direction away from the tilting line (18), and a projection (14) which can mate with a recess (15) in an adjacent transverse element (4) in a manner allowing free movement of adjacent elements in the longitudinal direction of the belt,

which recess (15) is a deformation recess over an entire width of the second part on the rear side of the

transverse element, the rear side being deformed to such an extent that the projection (14) is formed on the front side of the transverse element from the deformation forming the recess,

said projection (14) and said recess (15) extend in a horizontal direction over the entire dimension of the second part (12),

said projection (14) and said recess (15) are mainly formed in the second part of the transverse element (4), and

said projection (14) is disposed some distance above the tilting line (18), which distance is smaller than the smallest vertical dimension (A) of the recess (7, 8).

13. The belt of claim 1, wherein, a surface of the projection (14) comprises a recessed part (16), and the recess (15) comprises a projecting part (17), which recessed and projecting parts (16, 17) extend at an angle to a horizontal line in the plane in which the band packages (5, 6) lie.